

FCET Receives 4th US Patent for Disruptive Fuel Cell Technology Capable of Ultra-Low-Temperature Operation

"This is a 'clean energy' game changer with the potential for global impact on climate change," says FCET CEO Mark Deininger.

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Fuel Cell Enabling Technologies, Inc. (FCET)

Feb 27, 2018, 08:45 ET

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ALPHARETTA, Ga., Feb. 27, 2018 /PRNewswire/ -- Today, Fuel Cell Enabling Technologies, Inc. (FCET) has been granted its fourth in a series of eight U.S. patents pending protecting the company's ability to build its innovative solid oxide fuel cells (SOFCs). These unique fuel cells are consistently breaking performance records and drawing keen interest from the defense and energy industries. This technology is poised to transform industrial-scale fuel cell production and usher in a new age of clean and efficient electricity. Learn more about FCET's groundbreaking work at <https://fcet-inc.com/>.



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Most SOFCs convert hydrogen and oxygen (from air) into electricity at operating temperatures from 700° to 900° C. FCET set a new world record at Rice University when its fuel cell powered a light bulb at only 350° C. The company has since repeated the test, continuing to set new world records at 315° C and then again at 270° C. Now, FCET has patented a method for operating those fuel cells at room temperature, opening unprecedented opportunities for this formerly high-temperature technology.

According to FCET's patent attorney, "The latest patent illustrates FCET's fuel cell technology operating effectively at room temperature, which eliminates thermal breakdown issues and makes the technology far cheaper."

How Can FCET's SOFC Operate at Such Low Temperatures?

The electrolyte is a central key component of SOFCs, and a thinner electrolyte allows for lower operating temperatures. FCET has developed a means to make the electrolyte 1,000 times thinner than any other SOFC currently in production. The latest patent validates the company's claim that its unique thinner electrolyte is many times more ionically conductive than other typical SOFC electrolytes.

Dr. Paul A. Kohl, Regents' Professor at Georgia Institute of Technology, remarked that "[t]he simplicity of the single cell design is striking" after seeing a demonstration model of FCET's solid oxide fuel cells.

Why Is a Low Operating Temperature Important?

Lower operating temperatures also result in lower material and manufacturing costs — up to 70% less. These SOFCs also convert hydrogen into electricity at a very efficient rate, making them potentially a vital piece of tomorrow's electrical generating portfolio (particularly for distributed energy on-site). Finally, FCET's fuel cell offers the promise of extending the functional life of a fuel cell by as much as 300 percent since its lower operating temperatures produce much less stress on all the fuel cell's component parts over time.

What Exactly Is Claimed in This New Patent?

Relevant statements from FCET's latest U.S. Patent include the following: "(FCET's inventors) have achieved heretofore unknown room-temperature operation of solid oxide cells ... (T)he

array of new materials now available to construct these cells has exploded, since exotic and expensive high-temperature materials are no longer required."

In terms of sustainability, the patent also describes how the SOFCs developed by FCET "present an environmentally friendly alternative to mainstream energy production." Specifically, SOFCs don't require burning fossil fuels, and their conversion of chemical energy into electricity does not produce any greenhouse gases.

To date, \$13 million has been invested in FCET's revolutionary technology. Looking ahead, the company's hydrogen feedstock may soon be produced either from solar/wind electrolysis of water (or even just from sunlight and catalyzed water). If the hydrogen source is carbon-free, then the electricity produced by a fuel cell from this hydrogen source is also carbon-free.

About FCET

FCET, Inc. is the developer of low-temperature solid oxide fuel cells (SOFCs) incorporating nanoscale films to increase performance while reducing costs. The company holds numerous U.S. Patents, with many more pending, for its innovative technology, which is poised to disrupt the fuel cell industry and usher in a new age of clean, efficient energy. FCET's technology will be commercially viable once fully capitalized, and the company is seeking investors and partners interested in this tremendous opportunity to take a leadership position in tomorrow's energy industry.

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